

Remarks

The applicant has submitted revised Claims.

In paragraph 3 of the Office Action, under Claim Rejections, the Examiner remarked:

“Regarding Claims 14 and 19, The phrase ‘at least two circular arrangement’ (or at least two rows as in claim 19) is understood as positively and definitely reciting two (2) circular arrangements (or two rows) of magnetic components and possibly there may be be three or more circular arrangements (or rows) of magnetic components therein.

However, the interpretation of three or more circular arrangements (or rows) is simply a possibility which makes the recitation indefinite.”

The applicant has revised claims 14 and 19 to instead refer to “at least first and second circular arrangements,” thereby making it clear to which arrangements he later refers to.

A similar change is made to address the issue of paragraphs 4 and 5. The applicant believes that the phrase “at least” has been used and regarded as acceptable claim language.

In paragraphs 6 and 7 of the Office Action, the Examiner remarked:

“There is no antecedent basis...[for several nouns]”

The applicant has revised the language of the claims to correct this error.

In paragraph 11, the Examiner remarked:

“Regarding claim 14, Goldie et al disclose an electric motor comprising: a first body...having the majority of magnetic field lines pass through substantially nonmagnetic (air) across the first gap;...”

The applicant has revised the claims to fix this error by referencing a board in the first gap being of the majority of nonmagnetic solid material. The merit of such a construction, such as the elimination of eddy currents and cogging torque, have previously been discussed in the Specification and earlier Office Actions.

In paragraph 12, the Examiner made a similar remark for the linear version of the invention and this has been corrected as well.

The rejections in paragraph 13 and 14 regarding the particular construction of the magnetic components recited in the independent claims should be resolved by the differentiation of the independent claim material of the invention from that of Goldie, et al. as made above.

The applicant has cancelled claims 18 and 23 because of the rejection in paragraph 15.

In paragraph 18, the Examiner remarked:

“Regarding claims 15 and 20, Goldie et al. show all limitations of the claimed invention...however, Miyao et al. disclose an electric machine wherein the electrical circuit element (2 in Fig. 2) is a printed circuit board for the purpose of creating magnetic flux.”

The applicant has revised the claims to differentiate the invention from that of Goldie, et al, particularly with the introduction of a board in the first gap being of the majority of nonmagnetic solid material. The applicant firmly believes that the invention by Miyao, et al., does not use a printed circuit board “for the purpose of creating magnetic flux” In the Miyao, et al. patent, the printed circuit board serves as a mechanical and electrical connector, not as a magnetic flux-generating element; the magnetic flux-generating elements are clearly armature coils 9A1-3, 9B1-3, and 9C1-3 (see particularly FIG 2 and

FIG 3). In column 3, line 2, the patent states “The stator armature 2 includes a printed circuit board 4 having a perforation formed at an end thereof so that the stator armature may be secured to a stationary motor body not shown by means of a screw which extends through the perforation 5 though not shown” In column 5, line 33, the inventors teach that “FIG. 4 shows an example of energization controlling the circuit 40 which can be applied to the single phase brushless motor according to the present invention...the terminal 19 is connected to an end of a serial circuit of the armature coils 9A-1, 9A-2, 9A-3 for the phases u-1, u-2, u-3. The terminal 20 is connected to an end of a serial circuit of the armature coils 9B-1, 9B-2, 9B-3 for the phases v-1, v-2, v-3. The terminal 21 is connected to an end of the serial circuit of the armature coils 9C-1, 9C-2, 9C-3 for the phases w-1, w-2, w-3. Further down, in column 6, line 65 states “As a result, the armature coils 9C-1, 9C-2, 9C-3 are energized by electric current flow in a direction of an appended arrow mark so that, as seen from a hatched portion of the timing chart of FIG. 5c, a turning torque 62w for the phase w will be generated...” It is the applicants firm understanding that the magnetic flux of the motor is created by armature coils 9A1-3, 9B1-3, and 9C1-3, not printed circuit board 4.